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A.D. 1822 . . . . N° 4657.

SPECIFICATION

OF

GEORGE STRATTON.

FURNACES OF STEAM BOILERS, &c.

LONDON:
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Furnaces of Steam Boilers, &c.

STRATTON'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, George Stratton, of Hampstead Road, in the County of Middlesex, Engineer, send greeting.

WHEREAS His most Excellent Majesty King George the Fourth did, by His Letters Patent under the Great Seal of the United Kingdom of Great Britain and Ireland called England, bearing date at Westminster, the Second day of March, One thousand eight hundred and twenty-two, in the third year of His reign, give and grant unto me, the said George Stratton, my ex̃ors, adm̃ors, and assigns, His especial licence, full power, sole privilege and authority, that I, the said George Stratton, my ex̃ors, adm̃ors, and assigns, should and lawfully might, during the term of years therein mentioned, make, use, exercise, and vend, within England, Wales, and the Town of Berwick upon Tweed, and also in all His Majesty's Colonies and Plantations abroad, my Invention of "An Improved Process of Consuming Smoke;" in which said Letters Patent there is contained a proviso that if I, the said George Stratton, shall not particularly describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, by an instrument in writing under my hand and seal, and cause the same to be inrolled in His Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said Letters Patent, that then the said Letters Patent, and all liberties and advantages whatsoever thereby granted, shall utterly cease, determine, and become void, as in and by the same, (relation being thereunto had), will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said George Stratton do hereby describe and ascertain the nature of my said Invention, by the following description thereof, and a manner in which the same may be performed, by a Drawing and Figures annexed, that is to say:—

My said Invention doth consist in an apparatus which causes the smoke of fires to be consumed by preventing its escape from the fuel in any direction except through the immediate body of fire which generates it, thereby exposing it to such an intense heat as will consume it, and which apparatus may be added or attached externally to almost any part of any shaped boiler.

Description of the Drawing.

Before I begin to describe the Figures in detail, I should state, that my said apparatus, consisting in part of a reservoir of water or other liquid, is most peculiarly applicable to the fires of what are commonly called steam engine boilers, the boiler itself answering for the reservoir. I have therefore described it in the Drawing annexed as applied to a fire, where the boiler serves for the reservoir, and to a fire where a separate reservoir is attached to the boiler. Figure 1 is a section of what is commonly called a steam engine boiler, having two fires, shewing the application of my Invention to one fire, where the boiler itself serves for the reservoir of liquid, and to the other fire where my said apparatus is attached externally to the boiler, with a separate reservoir; the former of these fires I will first describe:—A A, is the boiler; B, B, being the water in it; at C are the fire bars of one of the fires under the boiler; D, D, D, is the flue, which passes entirely round the boiler and communicates with the chimney E immediately over the fire C, and passing down through the boiler is a pipe F, made of the same materials as the boiler, which I call the feeding pipe, because through this pipe the fuel is dropped down upon the fire C; this pipe should be of a conical form to admit the free passage of the fuel, the larger end of course being downward; the upper end of the pipe F is furnished with a neck to receive a cap or cover G, which should be made to close upon it as nearly air-tight as possible, or a trough or hopper may be fixed on the pipe F, with a feeding valve or slide. In order to use that part of my said apparatus herein-before described, a fire should be kindled on the bars at C, and fuel dropped upon it until the whole of the feeding pipe F is filled, or as much as occasion may require; then the cap or cover G, or the valve or slide of the trough or hopper should be closed; by this arragement the fuel on the bars at C under the feeding pipe F and a short distance up the pipe will be kept red hot, and the cap or cover G or the valve or slide of the trough or hopper being closed, no vent offers itself for the passage of the smoke

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FIG. 1.
Longitudinal Section.

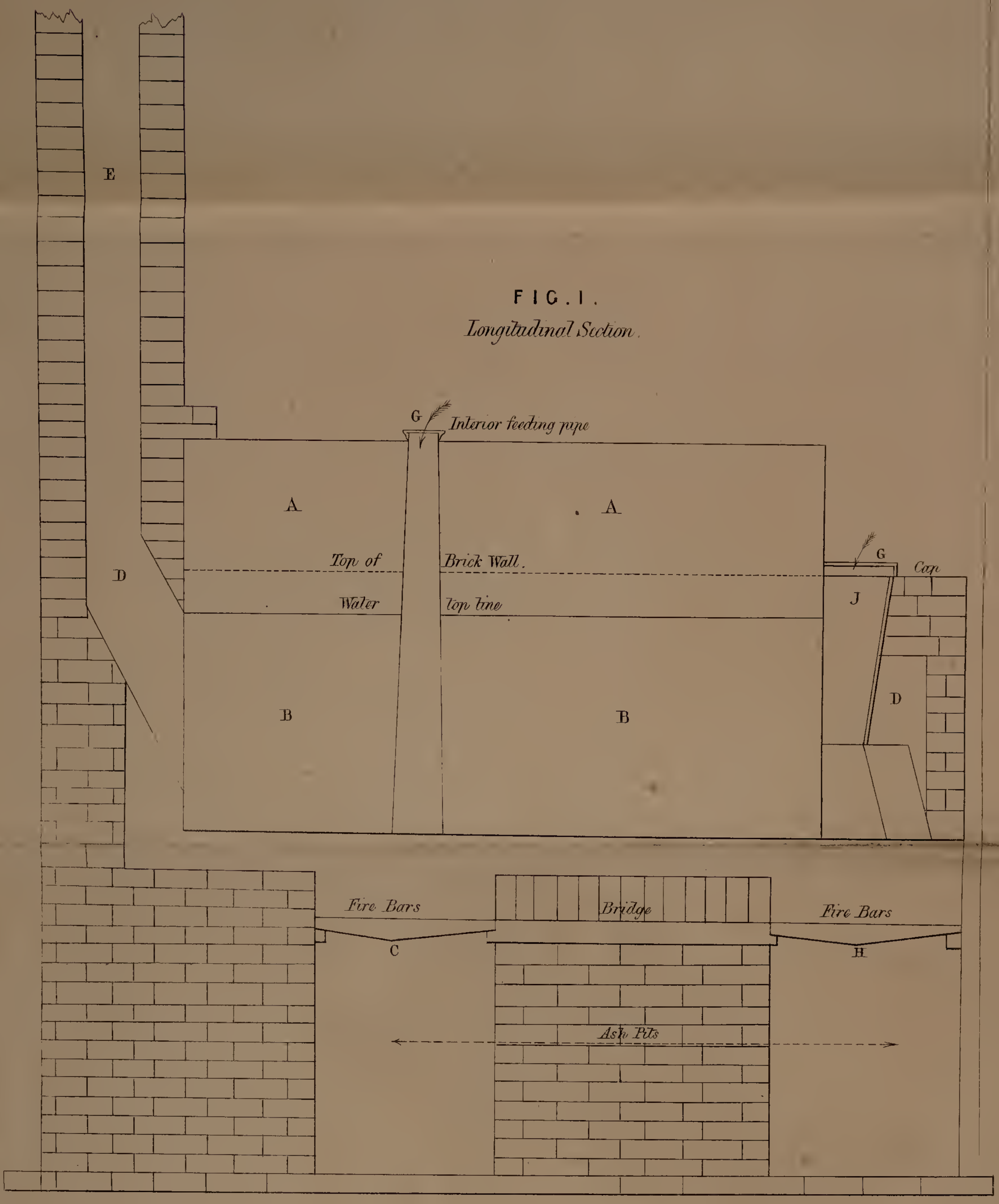
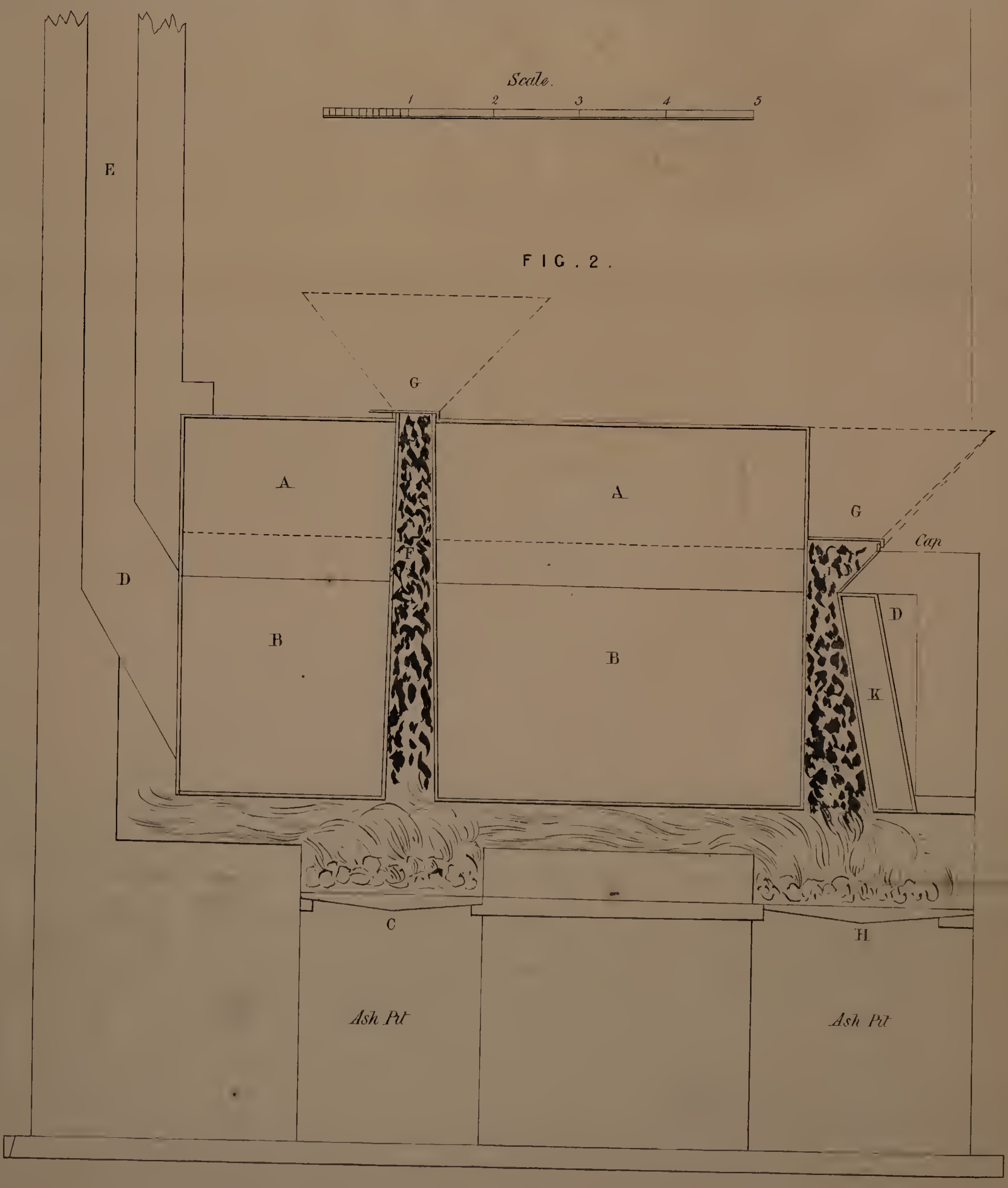


FIG. 2.



The enrolled drawing is colored.

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FIG. 3.

Top Plan.

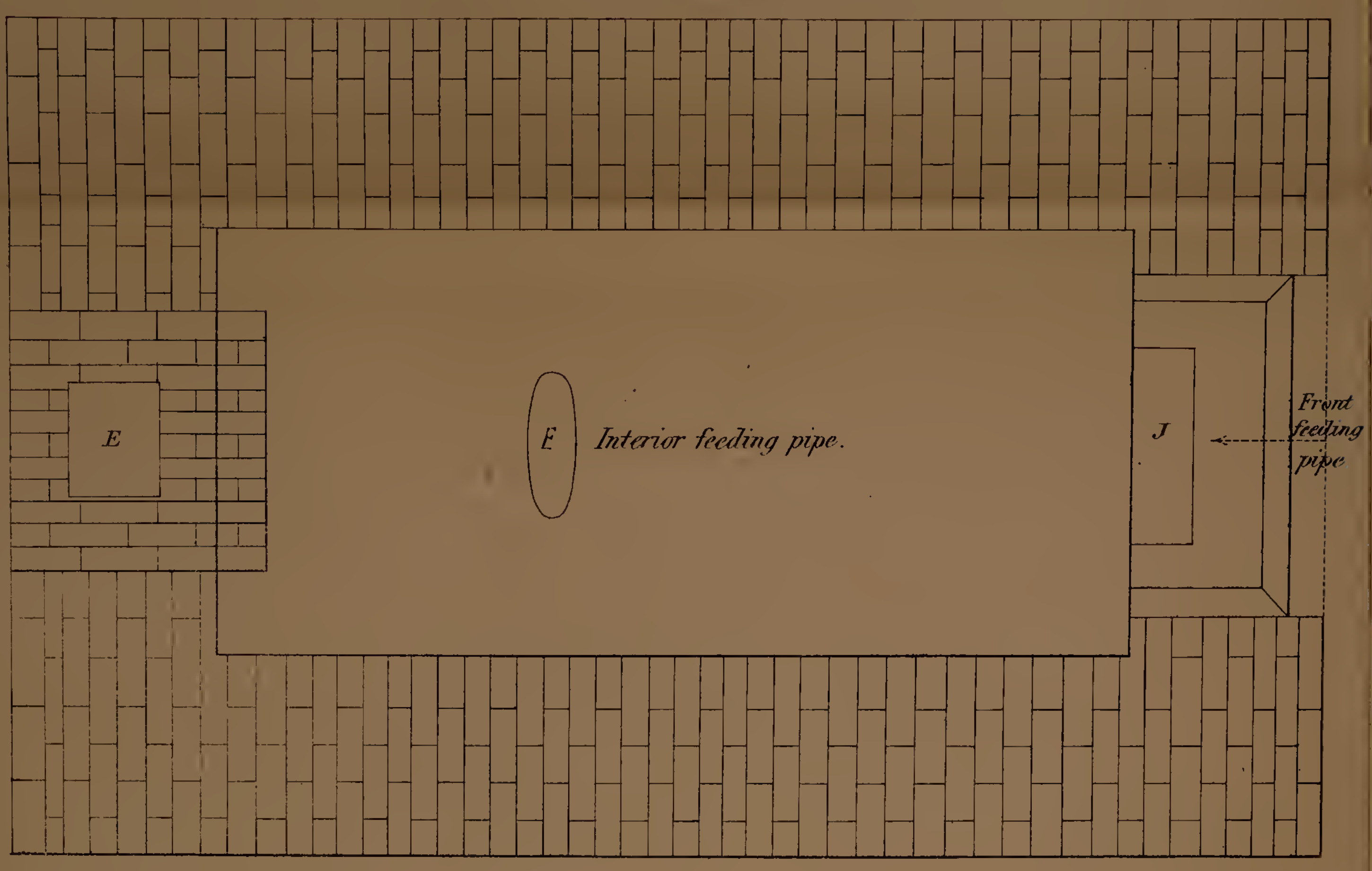


FIG. 4.

Lines of Basement.

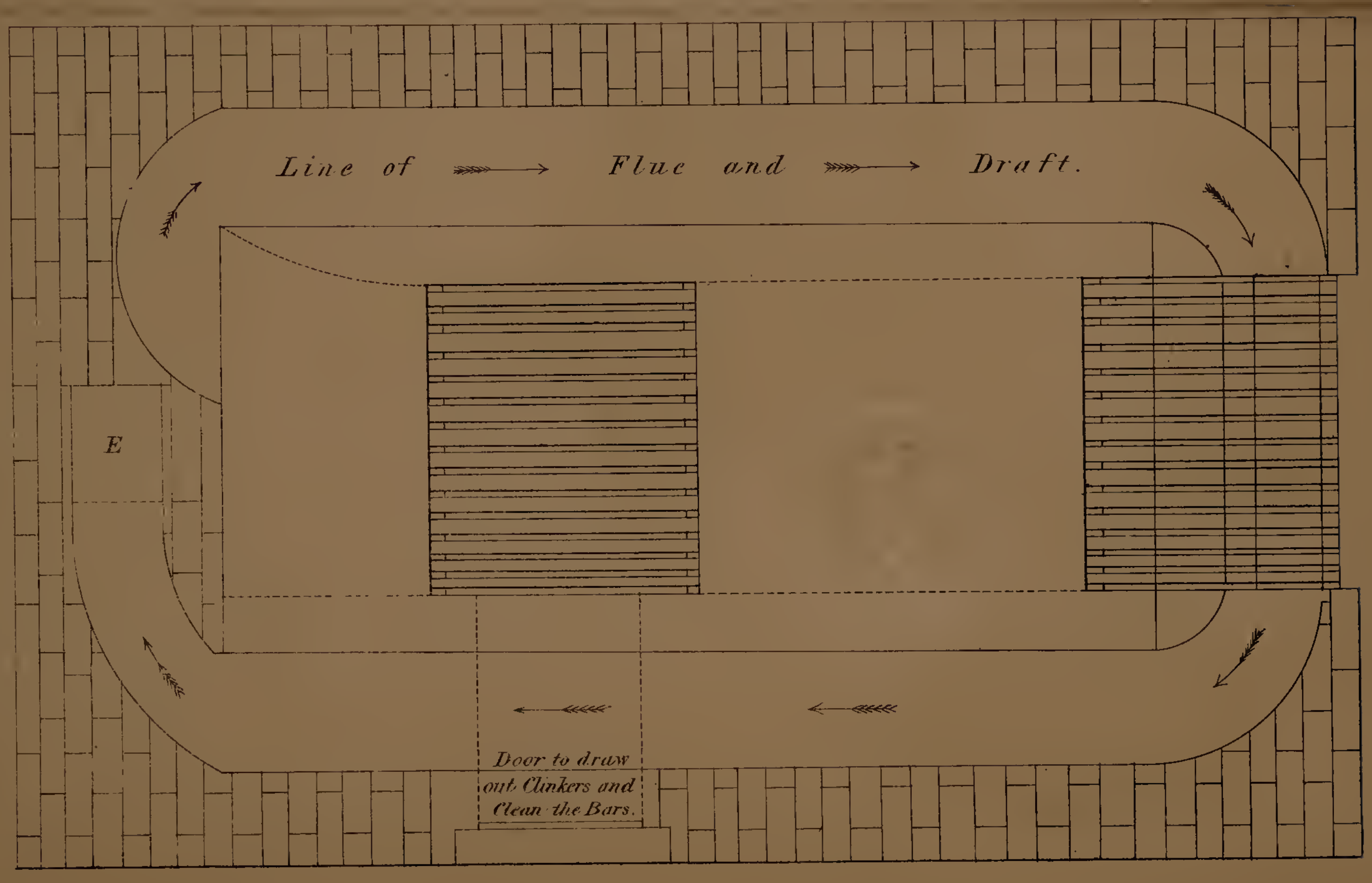
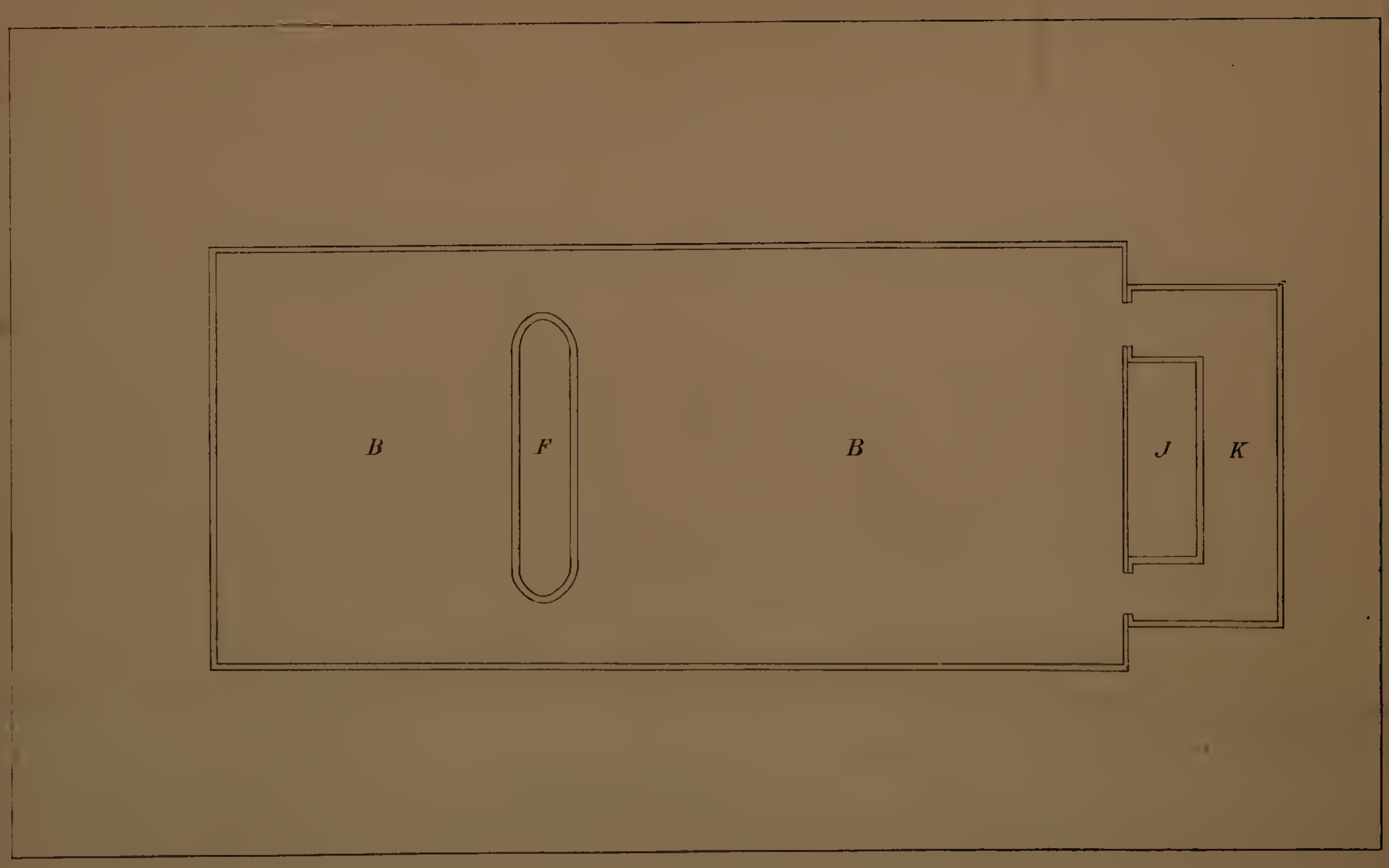


FIG. 5.



The enrolled drawing is partly colored.

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that may be evolved but downwards through the red hot fuel, the temperature of which destroys it. Having shewn the manner in which my said apparatus may be applied to steam engine boilers, the boiler serving for the reservoir of liquid, I will now describe the manner in which my said Invention may be applied to a fire, the apparatus being wholly unconnected with the boiler, and having a reservoir of its own; for this purpose I have added a second fire H to the boiler in this Figure, to which fire fuel is applied by means of the feeding pipe J, which has a reservoir of its own K for holding the liquid. It should here be observed, that the feeding pipe must be surrounded with water or other liquor, but that the only use thereof as regards the consumption of smoke, for which express purpose my said Patent is obtained, is to prevent the heat of the fuel below, and more especially in the feeding pipe, melting or otherwise destroying it. But to return to the part of this Figure now under description, J is the feeding pipe, or rather passage (for the exact shape of it is not material, so that the fuel can pass freely through it); K, the reservoir, is a hollow casing round it, (that is to say, round three parts or sides of it, into which water or other liquid is introduced from the boiler by means of apertures or openings from the one into the other, the boiler itself answering for the reservoir to that part or side of the feeding pipe J, which is not surrounded by the reservoir K; this reservoir K being supplied with liquid from the boiler by means of the said apertures, and there being a free communication of the water or liquid between the boiler and the reservoir, they should be made of the like materials. If the heat from the flue D should be found to cake the fuel as it passes down that part of the passage J above the reservoir, where the fuel is only separated from the flue by an iron plate, the reservoir may be carried up higher, as shewn in Figure 2. The reservoir K may be made entirely to surround the feeding pipe J, and receive its supply of water or other liquid from the boiler by means of apertures, but if it is not supplied with the water or other liquid from and has not a free communication with the boiler, it (that is to say, the reservoir) must be provided with such means or conveniences as are usual for replenishment, and for the escape of steam. The fire H being in fact a front fire, fuel may also occasionally be supplied at the door in the ordinary way, for any smoke which may be generated even in this manner will be carried forward by the draft to the second fire C, and as it cannot escape except through that fire it will be consumed or nearly so in its passage. The ash-holes, fire bars, flues, and other parts connected with my said apparatus being similar to those now in use, I do not think it necessary to specify them more particularly. Figure 2 is another representation of Figure 1, with the addition of the fuel being shewn on the bars at C and H, and in the feeding pipes F and J; the reservoir K also in this Figure is shewn round the pipe J at a much greater height than at Figure 1. In this Figure troughs or hoppers are shewn on the feeding pipes by dotted lines. Figures 3 and 4 are plans of my said Invention, as applied to steam engine boilers. Figure 5 is a transverse horizontal section of my said Invention cut through a little above the bottom of the boiler. Now my said apparatus may vary in its dimensions and proportions to suit the situations in which it is to be applied. But an apparatus applicable to fires, which causes the smoke from fires to be consumed by preventing its escape from the fuel in any direction except through the immediate body of fire which generates it, thereby exposing it to such an intense heat as will consume it, and capable of being added or attached externally to almost any part of any shaped boiler, being to the best of my knowledge and belief entirely new, and never before adopted for this purpose in this kingdom, I hereby declare this to be my Specification of the same, believing this my said Specification in all respects fully and without reserve or disguise to comply with the proviso in the said-herein before in part recited Letters Patent contained, and intending hereby to maintain an exclusive right and privilege to my said Invention.

In witness whereof, I have hereunto set my hand and seal, this Ninth day of August, in the year of our Lord, one thousand eight hundred and twenty-two.

GEORGE (L.S.) STRATTON.

SMITH, Extra.

AND BE IT REMEMBERED, that on the Ninth day of August, in the year of our Lord 1822, the aforesaid George Stratton came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written.

CROSS.

AND ALSO BE IT REMEMBERED, that on the Twenty-eighth day of August, in the year of our Lord 1822, the aforesaid George Stratton came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

Inrolled the Twenty-eighth day of August, in the year of our Lord One thousand eight hundred and twenty-two.

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